

# The Wasp

March, 1969



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The Warren Astronomical Society Paper

March 1969

## CLUB NEWS

### Meetings:

March 11<sup>th</sup>-- NOTE, the meeting of March 12th has been rescheduled to Tuesday the 11th. This meeting will feature Mt. Barkley, a guest speaker from Bell Telephone. The program discusses the most ambitious, complex, and potentially rewarding peacetime project ever undertaken by men -- sending astronauts to the moon and returning them safely. Please be ready to start at 7:30. All guests are welcome.

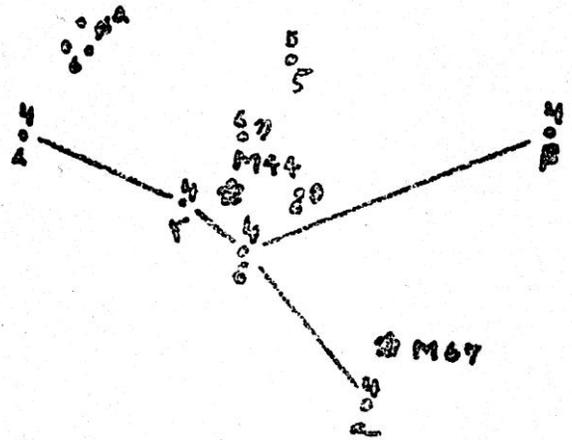
March 26th-- The central attraction of this meeting will be Mr. Leonard Draving, head of the science department at Cousino High School. Mr. Draving's topic will be "The Biological Effects of Supernovae." This daring new line of thought traces major evolutionary changes to exploding stars far out in space.

Field Trips: For those interested in solar astronomy the W.A.S. is planning an excursion to the McMath-Hulbert Observatory on March 8, 1969. Only 15 interested adults and high school students are permitted to attend. For further information contact Martin Butley at 758-6755.

### Projects:

Spectroheliometer-- The people involved met Feb. 19th to determine their course of action. Diane Bargiel was elected treasurer to handle the group's \$27. Frank McCullough and Dave Atnip volunteered to build the coelo-

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CONSTELLATION OF THE MONTH:  
CANCER

### Location

This zodiacal constellation lies between Gemini and Leo in the Spring sky. The notable star cluster in Cancer, the Praesepe, can be located by drawing an imaginary line from B Tauri to Pollux in Gemini and prolonging it approximately 15°. A line from Capella in Auriga through Pollux points toward Alpha Cancri, which bears the Arab name "Acubens."

### Description

Cancer is the most inconspicuous of the zodiacal constellations yet it makes up for its obscurity by containing two Messier objects, #67 and #44 and a notable number of double stars. By far the most outstanding object is the above-mentioned Praesepe or Beehive cluster. It lies within an irregular square of stars formed by Delta, Gamma, Eta, and Theta Cancri and has,

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## A FRESH LOOK AT TELESCOPING

As we look ahead to warm spring nights when it will be possible to do some viewing without freezing to death, we should begin thinking about the condition of our mirrors.

Most of us, after working diligently to make a telescope mirror, have it aluminized, assemble the parts and then proceed to use it occasionally tend to forget the fact that the mirror's surface is prone to deterioration. Generally, the telescope has been sitting in a basement, garage, or some other out of the way place where it has been collecting dust particles all winter. These particles, when present on the mirror's surface, tend to misdirect the light that hits the mirror, thus destroying the good images that we worked so hard to get during the polishing process. This misguided light will be picked up by a dirty eyepiece and will, in turn become visible to the eye as scattered light and blurry images. This often accounts for the halos sometimes seen around bright stars and planets.

This condition can be easily corrected in one of two ways: having the mirror re-aluminized, or by cleaning its surface. Those of us who cannot spend the money for a fresh aluminizing job can easily clean our own mirrors by immersing them in a pan containing a mild solution of detergent and distilled water. While the mirror is immersed, take small cotton balls and very lightly pass them over the mirror's surface. Remove the mirror from the solution, then rinse by immersing it in clear distilled water. Be sure to remember to tilt the mirror up from one edge as you remove it from the water. When done this way, most of this water will run off the mirror. The few remaining drops can then be removed by swabbing with dry cotton balls.

This, then, is the only successful way to clean a plain aluminized mirror that has no overcoating. Be sure to be careful while handling your mirror when wet, as you may slip and your fingers will smudge the mirror.

A dirty mirror is a situation which is easy to correct, but other problems may arise which are not so readily solved. The actual mirror coating itself is known to deteriorate.

The atmosphere itself, over periods of a year or so, can act as an acid, etching the surface of a mirror and thus bringing out the grain and/or crystalline structure of the metal. (Similar to a galvanized pail.) This is especially true if the mirror is stored in a basement where a faulty furnace may release gas containing sulfur compounds, such as sulfuric acid. It has been stated by R. Sumner (Mr. Optics) that an aluminized surface will deteriorate quite rapidly even in Arizona where there is practically no dew to speed the erosion of the surface of the mirror.

Mr. L. A. Sampson (the person who has probably coated your mirror) says that the Alloy Tin coating is especially resistant to this deterioration, but my mirror, Alloy Tin only two years old, has a definite grain structure which becomes especially prominent when one breathes lightly across the face of the mirror. A noted metallurgist, H. Davis, states that being an alloy, different parts of the coating will be attacked at different rates, thus producing a grain like structure. I am taking my mirror to Mr. Sampson later this week, and will record his findings in a future article. If you are interested in this problem, examine the surface of your mirror and report your findings to either Mr. Alyea at 754-2134 or Martin Butley at 758-6755.

**G. Alyea  
M. Butley**

Club News, cont.

stat, Gene Francis is in charge of the optical work, and Timothy LaBrecque, along with Martin Butley will take care of the vibrating slit mechanism. The completion date for the project is set at May 31, 1969.

Camp Rotary-- Mr. Polus has submitted a written report to the Grounds Committee, which meets Feb. 26th. He is confident that he will be able to obtain for the club, free of charge, a 10x12 portable wooden building in which to house the telescope. He is also looking into the possibility of bringing electrical power into the structure.

Chelsea-- The star party which the club was planning for the elementary students at Chelsea has been cancelled. Another party has offered their services during the March 11-13 period, thus saving us the 150 mile round trip.

#### TYCHO BRAHE

#### LAST OF THE GREAT NAKED EYE ASTRONOMERS

The advancement of the Copernican planetary system into the scientific arena in the late 15th century raised a great deal of controversy as to what the solar system was actually like. Many theories had been developed and later discarded because of their inability to explain the observed motions of the planets and stars. To make accurate observations of star and planet positions for which to test the various astronomical models became the work of the 16th century Danish astronomer, Tycho Brahe.

Born in 1546, he also developed a planetary system which, though erroneous, retains its value today in revealing the thinking of the scientists of this age. Tycho measured the positions of 777 "fixed stars" with many different types of instruments, including large sextants and compasses. Since the telescope had not yet been invented all his observations were made with his naked eye yet they were accurate enough to be in error by no more than 1/15 of a degree. His observations, made at his private observatory on the island of Hven, were the cont. page 5

constellation, cont.

occasion, been mistaken for a comet. This cluster was one of the first objects which Galileo viewed and it filled him with delight and amazement. It has been viewed by this author on a number of occasions, at Bald Mt. as well as at home, and it has always appeared bright and easy to see. In a dark sky a large number of faint, outlying members appear.

M67 is composed of stars from mag. 9 to 12.5 surrounded by brighter stars in the form of a semicircle.

To observe Cancer to advantage requires a dark clear sky, although it can be made out in part from the Warren area.

#### Double Stars

Iota 1	Mag. 4.2-6.6	Sep 31"	Yellow-Blue Fine Contrast
Zeta	Mag. 5.7-6.0	Sep 0.9"	Quadruple
	Mag. 6.3-7.8	Sep 0.2"	
Phi 2	Mag. 6.3-6.3	Sep. 8.0"	

#### Notable Facts

Cancer is due south at 8:00 pm on April 1st.

In June of 1895 all the planets except Neptune were in this region.

Halley's comet appeared here in 1531.

The Beehive contains approximately 358 stars down to the 18th mag.

The cluster is 500 light years from earth.

Information taken in part from Olcott's Field Book of the Skies.

end.

Gene Francis

#### THE WASP SALUTES

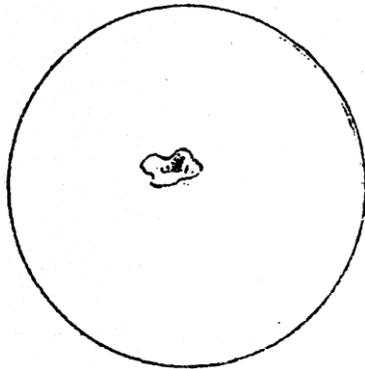
Mrs. Jean Baldwin, who has offered her services as club treasurer for almost five years. She is a quiet unobtrusive member, but she's always there, whether it be a meeting, or at a camp-out passing out hot dogs. People like her provide the foundation upon which a great club must be built. We give our thanks and appreciation.

## OBSERVATIONAL ASTRONOMY

I viewed the Crab Nebula on three occasions during February while it was high in the early evening skies. I found the object just northwest of the third-magnitude star Zeta Tauri in Taurus the Bull. The Crab is an 8.4 magnitude object and is quite faint. The approximate coordinates of the Crab are 5 hours 35 minutes and 22°.

I used a four and a half-inch reflector with a focal length of 900 mm. The magnification used was only 45X in order to obtain sufficient light gathering power for the small telescope.

The Crab Nebula is a tricky object if you do not know what you are looking for. When I viewed it for details I



CRAB NEBULA  
(M1)

found it looked like a small piece of cotton. I found no streamers or spray from the explosion but the white faint cloud of helium and hydrogen was there like a puff of smoke. It played hide and seek on me many times while it was still in my eyepiece. After using averted vision on the nebula I was able to keep track of it and make out the dark and light parts of the nebula. The location of the Crab to the star Zeta makes it an easy object compared to others. I must stress the importance of using low power while searching for the object. The drawing is close to what I saw, the circle representing the field of view.

Frank McCullough

## NOTES FROM THE GRAPHIC TIME TABLE

### PLANETS:

#### Mercury

Poorly placed in the morning sky, the planet's position deteriorates as the month progresses. On the first, Mercury rises an hour before the sun; on the 31st, 5 min. before the sun.

#### Venus

Reaching greatest brilliancy on the third of this month, the planet does not set until 9:50 pm. Moving closer to the sun by the end of the month the planet will set at 8:00 pm.

#### Mars

Improving in position throughout the month, the planet rises at 12:35 am on the 13th and transits at 5:25 on the same date.

#### Jupiter

Visible almost all night this month, Jupiter rises at 7:15 pm, transits at 1:15 am, and sets at 7:20 on March 13th.

#### Saturn

Becoming more poorly placed as the month progresses, Saturn will set at 9:05 pm March 13th.

#### Sun

March 1st sets at 6:20, end twilight at 7:55, morning twilight 5:35, rises at 7:05.

March 31st sets at 6:55, end twilight at 8:25, morning twilight 4:45, rises at 6:15.

#### Moon

FM 4th, 7:15 pm	perigee
LQ 12th, 3:25 am	13th 4:20 am
NM 17th, 6:20 pm	apogee
FQ 26th, 2:45 am	25th 1:50 am

#### STARS, March 13<sup>th</sup>:

4:55 Pleiades transit  
6:40 M42 transit  
7:50 Sirius transit  
8:40 Castor transit  
11:10 Regulus transit  
12:00 sidereal time 11:25  
3:05 Polaris lower culmination

Tycho Brahe, cont.

most accurate ever to be recorded in this era of visual astronomy.

As a result of these observations, it was soon discovered that the Copernican system was basically correct and a stand was soon stated for a more accurate description of planetary orbits.

This search was to end with the mathematical work done by Johann Kepler near the end of the 16th century. His three famous laws governing planetary motion and the concepts behind them will be the subject of next month's column, "Physics in Astronomy."

Gene Francis

#### QUESTION OF THE MONTH

Does the sunlight that falls on the Earth have any weight?

#### ANSWER OF THE MONTH

The light pressure on the surface of the Earth is given as two pounds per square mile.

taken from

1001 Questions Answered About Astronomy